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ABSTRACT

Critics claim that the "dropout rate" as currently used in Texas and other states captures only a snapshot of a group of students at one time. To expand ways of reporting school completion rates, detailed completion data were assembled for four cohorts of Texas high school students, the graduating classes of 1994 through 1997. Completion rates were analyzed using much the same demographic categories as used in the annual report of the Texas Education Agency. In the process, some trends and patterns were found that would not have been detected using annual even-based dropout or graduation rates. Actually replacing dropout rates with completion rates in the Texas Academic Excellence Indicator System would require a change in statute, but the additional information provided by cohort data suggests that a longitudinal perspective might be a valuable supplement to the more commonly used annual event-based analysis. For the new measures, the completion rate is the number of completers divided by the number of students in the cohort. The analyses show that completion rates for Texas high school students have climbed steadily over the past 4 years, with the greatest gains in the student populations that were most in need of improvement. An appendix contains a synopsis of student progress through high school over a 4-year period. (Contains 7 tables and 10 references.) (SLD)

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FOUR YEARS OF HIGH SCHOOL COMPLETION RATES IN TEXAS: A NEW PERSPECTIVE ON AN OLD TOPIC

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Four Years of High School Completion Rates in Texas: A New Perspective on an Old Topic

Background

The percentage of students completing (or, conversely, failing to complete) secondary education is widely considered a key indicator of the success or failure of the educational system. Federal authorities routinely publish event- and status-based dropout and graduation rates for state-to-state comparisons (NCES, 1996). Many states, including Texas, use annual event-based dropout and graduation rates for within-state comparison of districts and campuses. In the Texas Academic Excellence Indicator System (AEIS), annual dropout rates are one of the base indicators in the evaluation of campuses and districts, used for district accreditation.

Dropout and enrollment data are easy to collect, and the dropout rate is easy for the public to understand, making it useful for evaluation and accountability purposes. Critics, however, claim that since the current dropout indicator only captures a "snapshot" of a group of students at one point in time (Calderon, 1996), it does not describe a "true" picture of the school careers of individuals or groups of students (Arrigona, 1991; Cardenas, Robledo, & Supik, 1986; Ligon, Stewart, & Wilkinson, 1990). In response to these criticisms, the commissioner of education initiated a research study to investigate the possibility of introducing a longitudinal measure of school completion (TEA, 1996). One result of that study is that this year, completion rates appeared for the first time in the AEIS, as report-only measures (not indicators), at the district level.

In preparation for various completion rate reports, detailed completion data were assembled on four cohorts of Texas high school students: the graduating classes of 1994 through 1997. Completion rates were analyzed using much the same demographic categories as used in TEA's annual dropout report. In the process, some trends and patterns were found that would not have been detected using annual event-based dropout or graduation rates.

Actually replacing dropout rates with completion rates in AEIS would require a change in statute, an event unlikely to occur in the foreseeable future. The additional information made available by using cohort data, however, suggests that a longitudinal perspective might be a valuable supplement to the more commonly-used annual event-based analysis.

Methods and Procedures

Data sources. Individual student enrollment, advancement, demographic, graduation, location, and dropout information is submitted annually to TEA by all school districts in Texas, subjected to extensive validation and cleaning, and stored in the Public Education Information Management System (PEIMS). GED tests are scored at The University of Texas Scoring Center as the tests are completed, and the results transmitted to TEA electronically on an ongoing basis. In both the PEIMS and GED databases, each record is linked to a specific student by the student's unique person identification code (PID), and this code is then used to link records for individual students across multiple years, creating a cohort of students that can be tracked over time.

General approach. Historically, measures of school performance fall into one of four types: annual, status, estimated longitudinal, and longitudinal (TEA, 1996). The

completion rate model used in this study is an adaptation of the Holding Power Index (HPI; Hartzell, McKay, & Frymier, 1992), a longitudinal measure. It follows a cohort of first-time 9th graders through a four-year time window, and summarizes the final completion status achieved by those students over those four years. Students transferring into the Texas public education system during the time window of the cohort and at the same expected grade level as the initial cohort members are added to and tracked with the cohort. Students who graduate, drop out, or earn a GED certificate are identified from the appropriate records in PEIMS. Those no longer locatable in the PEIMS database are treated as transfers out of the system, not as dropouts.

Completion rate formula. The completion status of a given or "base" year's first-time 9th grade students (a "cohort") is defined after four years have elapsed. Members of that cohort (adding in those who transfer in; and excluding those who transfer out) who graduate early or on time, earn GED certificates through February of the fifth year, or are still enrolled that school year, are considered "completers." The completion rate, then, is the number of completers divided by the number of students in the cohort.

N of completers = (On-time graduates + early graduates + GED recipients + continuing students)
N in cohort = (First-time 9th graders in base year + transfers in - transfers out)

(Source: TEA AEIS Glossary)

The completion rate used in this study and in the AEIS differs from other annual, status, and longitudinal measures, including dropout rates, graduation rates, and the HPI as originally specified, in several ways:

- In contrast to the dropout rate, which measures dropouts as events in a school year, the completion rate measures the final dispositions of a cohort of students.
- The dropout rates reported in AEIS use cumulative attendance as the denominator and cover grades 7-12. The completion rates reported in this study and in AEIS use fall enrollment as the denominator and cover grades 9-12.
- In contrast to the HPI as originally specified, dropping out and leaving are not necessarily considered terminal events. A student may return after dropping out or leaving, and will count as a completer if s/he meets any of the completion criteria.
- In contrast to the methodology used in reporting dropout rates in the AEIS, a student may drop out, leave, or both, more than once during high school. These events will affect the student's final status only if they are the last events recorded for that student in PEIMS.
- In contrast to graduation rates, the completion rate includes more than graduation: students earning GED certificates and those who are still enrolled are considered completers or as working toward completion.
- Students in the cohort who are retained in grade or double-promoted (skipped) are still considered members of the cohort. Students retained in grade from the prior cohort, or skipped from the next cohort, are not. Because grade is reckoned as of the fall snapshot data submitted by the districts, students who advance at times other than at enrollment in the fall may appear to be skipped one year and retained the next, and vice versa. The course of the cohort over time is illustrated in Appendix A.

Findings

Table 1 Statewide Completion Rates

	Students in Cohort	Completion Rate	Graduation Rate	GED Rate	Continuation Rate	Lost to Followup
1994	209,993	85.3	72.2	5.9	7.1	77,935
1995	215,697	87.7	73.2	7.7	8.9	77,521
1996	216,703	89.4	73.7	8.9	8.2	80,029
1997	224,425	90.7	75.8	8.2	6.7	81,288

Statewide trends in completion rates: As shown in Table 1, the completion rate in Texas has increased for each successive cohort over the past three years, from 85% for the class of 1994 to 91% for the class of 1997. Of those completing, the percentage actually graduating has declined slightly, from 85% to 84%, while the percentage completing by earning a GED certificate has increased slightly, from 7% to 9%.

Student characteristics. As completion rates are related to dropout rates, it is reasonable to look for an association between completion rates and those student characteristics and program participation that have been found to be strongly associated with dropout rates:

Table 2 Completion Rates by Ethnicity

		Students in Cohort	Completion Rate	Graduation Rate	GED Rate	Continuation Rate
White	1994	107,373	91.2	80.7	6.6	3.9
	1995	110,856	92.8	81.1	8.2	3.6
	1996	111,746	93.8	81.3	9.1	3.5
	1997	115,581	94.5	82.5	8.7	3.4
African American	1994	27,335	79.0	64.4	5.0	9.7
	1995	28,067	82.4	66.2	6.8	9.3
	1996	28,001	85.5	67.9	8.2	9.4
	1997	29,654	87.2	70.6	7.3	9.4
Hispanic	1994	69,163	78.3	61.4	5.6	11.3
	1995	70,593	81.4	62.7	7.7	11.0
	1996	70,697	83.4	63.1	9.2	11.2
	1997	72,707	85.7	66.4	8.1	11.1

Ethnicity: From 1994 to 1997, the completion rates for White students increased from 91% to 95%. At the same time, African American students went from 79% to 87%, and Hispanic students from 78% to 86%. While there is still a marked difference in completion rates between minority and White students, the gap has narrowed every year. Over the past four years, all ethnic groups have experienced a 1% to 3% increase in the percentage of students completing by GED.

Table 3 Completion Rates by Gender

		Students in Cohort	Completion Rate	Graduation Rate	GED Rate	Continuation Rate
Female	1994	102,756	86.3	75.2	5.4	5.7
	1995	106,135	88.7	76.5	6.9	5.3
	1996	106,615	90.3	77.2	7.9	5.3
	1997	110,816	91.6	79.2	7.0	5.4
Male	1994	107,237	84.4	69.4	6.5	8.6
	1995	109,562	86.8	70.0	8.6	8.2
	1996	110,088	88.4	70.3	9.8	8.2
	1997	113,609	89.9	72.5	9.3	8.1

Gender: Completion rates for both male and female students have increased equally for each of the past three years. Females are still about 2% more likely to complete than males. Of those completing, there has been a slight increase in the percentage completing by GED for both males (from 8% in 1994 to 10% in 1997) and females (6% to 8%).

Table 4 Completion Rates by Selected Student Characteristics

		Students in Cohort	Completion Rate	Graduation Rate	GED Rate	Continuation Rate
Economically	1994	58,024	77.3	60.3	5.8	11.2
Disadvantaged	1995	62,426	80.5	61.4	7.9	11.2
	1996	65,235	82.5	62.0	9.4	11.1
	1997	70,525	84.7	65.1	8.4	11.2
At Risk	1994	48,619	73.6	54.6	8.2	10.8
	1995	58,265	77.2	55.8	10.6	10.8
	1996	82,960	82.8	61.5	11.3	10.0
	1997	107,104	86.9	67.8	9.9	9.2
Retained in	1994	33,038	67.9	23.3	15.6	29.0
Grades 9-12	1995	35,641	72.7	25.0	19.9	27.8
	1996	37,100	75.3	26.6	21.8	26.9
	1997	36,844	77.2	29.5	20.4	27.4
Over-age at	1994	66,337	67.3	48.0	9.7	9.6
Beginning of	1995	64,706	70.9	49.1	12.6	9.2
Grade 9	1996	64,321	74.8	50.7	14.8	9.2
	1997	61,763	77.2	53.6	14.3	9.3

Economically disadvantaged: The percentage of economically disadvantaged students in the cohort has increased each year, from about 27% in 1994 to about 31% in 1997. While the completion rates for these students have increased faster than those of non-disadvantaged students, they are still much less likely to complete (85% vs. 93%), and

they are more likely to complete by continuation (13% vs. 5%) or GED (10% vs. 9%) than are non-disadvantaged students.

At-risk: The percentage of students considered at risk of dropping out has increased from under 25% in the 1994 graduating cohort to almost 50% in the 1997 cohort. At the same time, the completion rate for at-risk students has improved dramatically, from 74% in the 1994 cohort to 87% in 1997. Their completion, however, is much more likely to occur via continuation (11%) or GED (11%) than that of non-risk students (5% continuation and 7% GED recipients, respectively).

Retained in grade / over-age for grade: Historically, students who were over-age for grade had much higher dropout rates than on-grade students (TEA, 1998b). Over-age students constituted about 32% of the 1994 cohort, declining to 28% of the 1997 cohort; about 16% to 17% of each cohort was retained at least once in high school. During that time, the completion rate for over-age students improved from 67% to 77%, which is still almost 20% lower than the completion rate for on-grade students. Students who were identified by TEA as having been retained within the time window of the cohort had about the same completion rates as those who were over-age. In the 1997 cohort, more than 30% of the over-age students and more than 60% of the retained students who were identified as completers either earned a GED or continued their education beyond four years.

In all four cohorts, minorities were disproportionately represented among over-age students, accounting for about 60 percent of the over-age group, but only about 45 percent of the cohort. Being over-age for grade appeared to have a much stronger relationship to the completion rates of minority students than White students. Over-age White students had a completion rate of 84 percent in the class of 1997, while Hispanic and African-American students had completion rates of 72 and 73 percent, respectively. For on-grade students, the completion rates for minorities were much closer to those of White students: 94 percent vs. 97 percent.

Among minority students, over-age students had almost uniformly low completion rates (72 to 73 percent). On-grade, non-economically disadvantaged students had relatively high completion rates, regardless of ethnicity (95 to 98 percent), as did on-grade economically disadvantaged students (92 percent).

Table 5 Completion Rates by Services Received

		Students in Cohort	Completion Rate	Graduation Rate	GED Rate	Continuation Rate
Special	1994	17,274	77.7	59.8	3.5	14.4
Education	1995	18,417	79.7	61.1	4.8	13.9
	1996	19,961	81.6	62.4	5.7	13.5
	1997	21,870	83.6	64.7	5.3	13.6
Career and	1994	64,860	80.7	66.2	7.2	7.4
Technology	1995	67,226	84.0	67.9	9.2	7.0
	1996	68,590	86.5	69.1	10.4	7.0
	1997	72,568	88.2	72.1	9.5	6.7

Special Education. The percentage of students receiving special education services increased from 8 percent in the 1994 cohort to 10 percent of the 1997 cohort, as shown in Table 3. Their completion rates have improved each year, from 78 percent in the class of 1994 to 84 percent in the class of 1997. This improvement has kept pace with the overall improvement from year to year, but remains about 8 percent behind the completion rate for students not receiving special education services.

Career and Technology. Students in Career and Technology (C/T) programs represent about 30 percent of the class of 1997. The 88 percent completion rate for C/T students in the class of 1997 was about 4 percent lower than the rate for other students. Between the classes of 1994 and 1997, however, the completion rate for C/T students has improved 7 percent, versus a 5 percent for non-C/T students. African American and Hispanic C/T students experienced improvements of 9 percent and 10 percent, respectively, in their completion rates, compared with 7 percent for non-C/T minority students.

Transfer students. One of the benefits of the cohort completion rate methodology is the ability to identify and study a group of students who tend to be overlooked in the annual dropout rate approach: transfer students. Students who are no longer locatable in the PEIMS database, and who have not been reported as a graduate, GED holder, or dropout by the end of the cohort time window are considered to have exited the Texas public education system. A student is not considered a dropout if s/he exits for any of the following reasons:

- Moved to another state
- Transferred to private school or home schooling.
- Transferred to a state-approved GED program
- Incarcerated.
- Died.

Because "transfer" is a residual category, some students are subject to misclassification as transfers due to aspects of the structure and processing of the PEIMS data:

- Students who had been reported previously as a dropout at any point beginning in 7th grade are not counted as dropouts in AEIS, even if they subsequently drop out and do not return. When the cohort is assembled from annual data, they will appear to be transfers out of the system.

- Discrepancies in recording the student's identification code (PID) in data transmitted from the districts to TEA can result in missing enrollment, graduate, GED, or dropout records, making the student appear to be a transfer.

- Districts are required to report dropouts in PEIMS. If a district's follow-up on a departed student shows that the student left for any of the non-dropout reasons listed above, or if there is no evidence that the student has dropped out, no dropout record will be submitted.

Beginning in fall, 1998, districts are required to report all students who were in attendance in grades 7-12 in the previous school year and are not in enrolled in the same district in the fall. This report will include all dropouts, graduates, and other school leavers from the previous year, as well as students who move to another district, home school, or private school (TEA, 1998a). This information will be entered into the completion rate computation for the class of 1998, and is expected to provide a much more complete accounting of the final status of students who left after the 1997-98 school year.

Unfortunately, the leaver record was not implemented until after the cohorts for the present study were assembled; realistically, the status of the students classified as "transfers" is uncertain. Despite these limitations, the PEIMS data is complete and accurate enough to provide at least a descriptive overview of the transfer student population and its characteristics statewide.

Statewide trends. Tables 6 and 7 below describe patterns of migration of high school students into and out of Texas over the four cohorts studied. In each of the cohorts, over 25% of the cohort, including over 23% of the original 9th grade cohort members, left before the end of the cohort window without achieving one of the final statuses (graduate, GED, continuing, or dropout) counted in the completion rate. As shown in Table 7, each cohort also experienced some in-migration in each year of the cohort window, but not enough to offset the number of leavers. Typically, about 7% to 10% of the students in each cohort left each year, not counting those who left but returned in a later year.

Table 6 Out-Migration by Cohort

	Starting Cohort	Grade 9	Grade 10	Grade 11	Grade 12	Total
1994	242,974	26,068	18,424	16,879	16,564	77,935
		10.7%	*7.6%*	*7.2%*	*7.3%*	*27.1%*
1995	254,133	21,001	20,789	18,217	17,514	77,521
		8.3%	*8.3%*	*7.5%*	*7.5%*	*26.4%*
1996	257,496	22,276	22,591	17,441	17,721	80,029
		8.7%	*8.9%*	*7.2%*	*7.6%*	*27.0%*
1997	267,456	23,035	22,634	17,725	17,894	81,288
		8.6%	*8.6%*	*7.0%*	*7.4%*	*26.6%*

Table 7 In-Migration by Cohort

	Starting Cohort	Grade 10	Grade 11	Grade 12	Total
1994	242,974	25,174	11,053	8,727	44,954
1995	254,133	18,072	12,777	8,236	39,085
1996	257,496	19,222	11,913	8,101	39,236
1997	267,456	18,540	11,530	8,187	38,257

Discussion

Completion rates for Texas high school students have improved steadily over the past four years, and the greatest gains have occurred in the student populations that were most in need of improvement. The longitudinal completion rate methodology offers new information on the experiences and achievements of different types of students, including:

Early graduates. Of the over 170,000 graduates reported in the class of 1997, almost 6,000 (over 3%) graduated at least a year early. Over half (2,800) of those students were over-age for grade when they first entered the cohort. Fewer than half (2,300) skipped a grade during the cohort window.

Continuing students. Of the more than 200,000 students considered to be completers in the class of 1997, over 15,000 were found to be still enrolled in fall 1997. Over 5,700 of the continuing students were over-age for grade in their first year in the cohort.

GED. The GED appears to be an important route for school completion for students in many groups that have had historically high dropout rates, including economically disadvantaged, at-risk, over-age for grade, and minorities.

In addition, the completion rate analysis process has highlighted the important group of students who are lost to follow-up through PEIMS each year. The current completion rate methodology calls for these students to be counted as transfers out of the Texas public education system, a residual category. The unexpectedly large proportion of students that fall into this category, coupled with the uncertainty regarding their final status, represents a sizeable information gap. The PEIMS leaver record now being implemented is expected to fill that gap. The completion rates reported in Texas in the coming years will represent an increasingly complete and accurate picture of the performance of our public schools.

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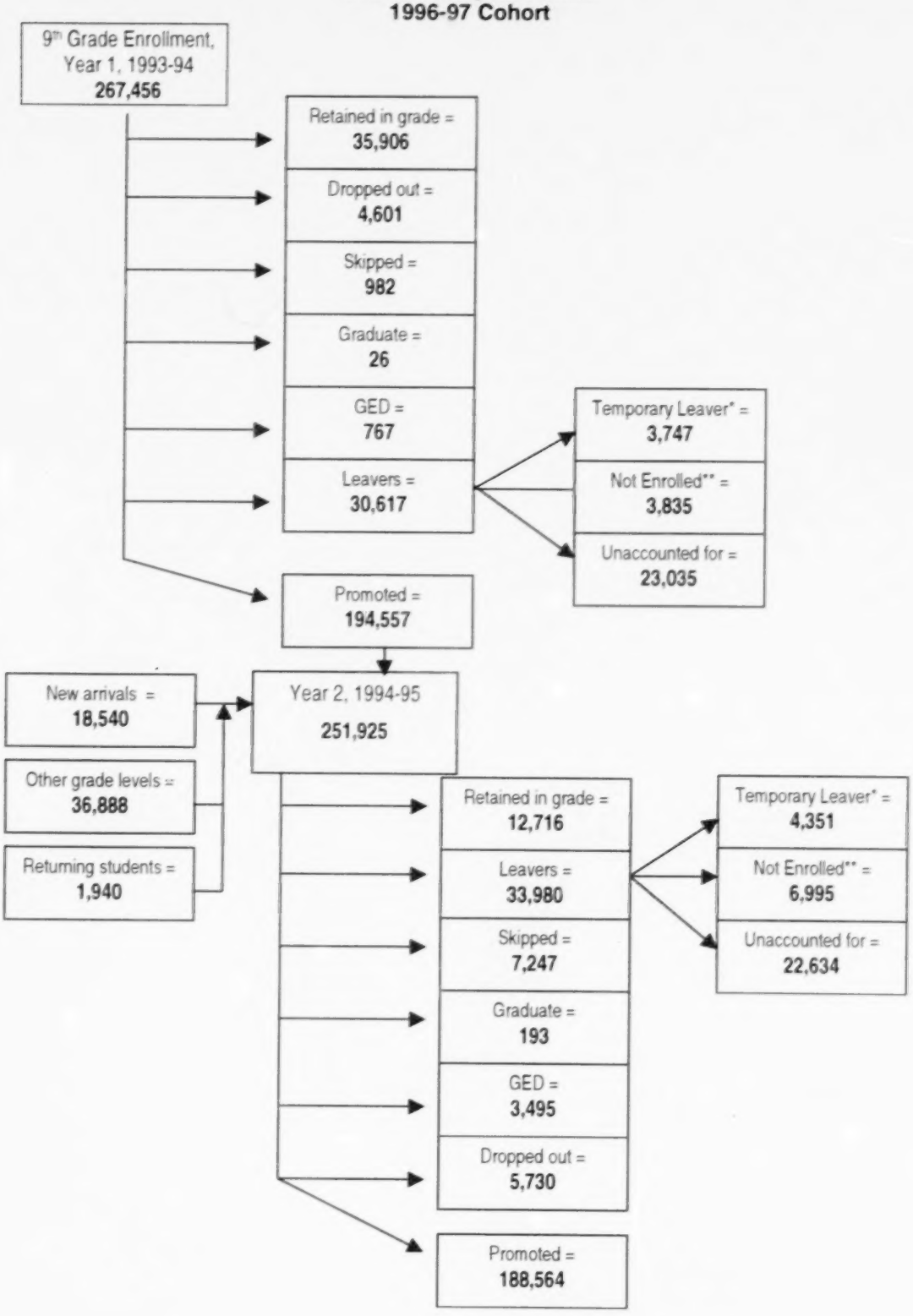
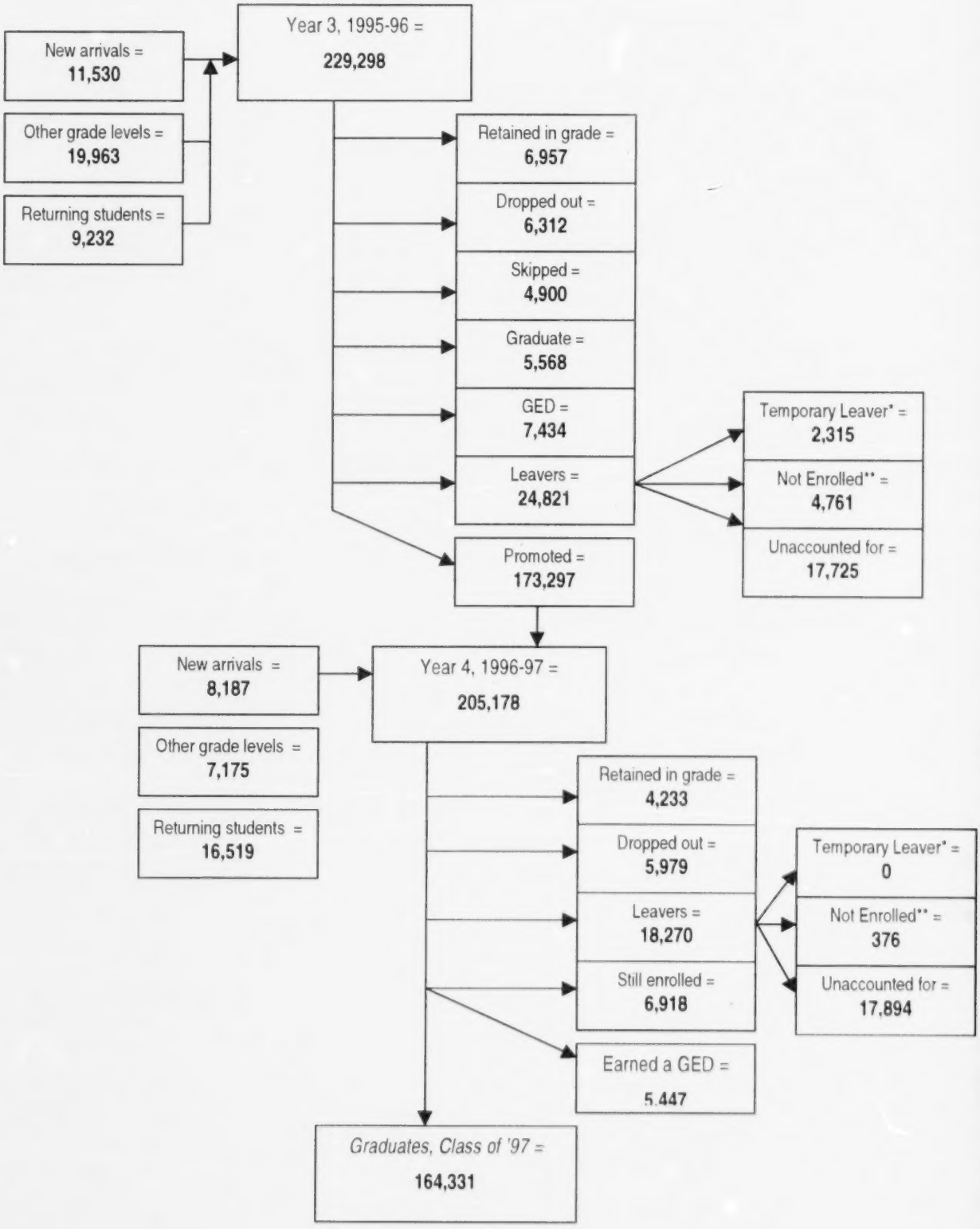
Appendix A: Synopsis of Student Progress through High School over a Four-year Period 1996-97 Cohort



Appendix A: Synopsis of Student Progress through High School over a Four-year Period 1996-97 Cohort


New arrivals = 11,530
Other grade levels = 19,963
Returning students = 9,232
Year 3, 1995-96 = 229,298
Retained in grade = 6,957
Dropped out = 6,312
Skipped = 4,900
Graduate = 5,568
GED = 7,434
Leavers = 24,821
Temporary Leaver* = 2,315
Not Enrolled** = 4,761
Unaccounted for = 17,725
Promoted = 173,297
New arrivals = 8,187
Other grade levels = 7,175
Returning students = 16,519
Year 4, 1996-97 = 205,178
Retained in grade = 4,233
Dropped out = 5,979
Leavers = 18,270
Still enrolled = 6,918
Temporary Leaver* = 0
Not Enrolled** = 376
Unaccounted for = 17,894
Earned a GED = 5,447
Graduates, Class of '97 = 164,331